

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions of claims in the application:

Listing of Claims:

1. (Currently Amended) A heat regulating device for regulating a heat flow into and out of an integrated circuit semiconductor body comprising:

a plurality of thermo-electrical structures that create a uniform temperature gradient across an integrated circuit semiconductor body via at least one of heat inducement to ~~and/or~~ dissipation of generated heat away from a portion of the integrated circuit semiconductor body;

at least one layer of a conductive material in contact with the plurality of thermo-electrical structures for conducting heat flow; and

at least one of the plurality of the thermoelectric structures has a distribution of line patterns that is denser towards center of its structure and decreases in density towards outer limits of the structure.

2. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures is a trough within the body of the layer of the conductive material.

3. (Previously Presented) A heat regulating device according to claim 1, the plurality of the thermo-electrical structures form a spreading assembly.

4. (Original) A heat regulating device according to claim 3, the spreading assembly is operatively connected to a heat sink.

5. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures is a conductive pathway for heat transfer.

6. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures has a structure of line patterns selected from a group comprising: maze-shaped structure, helix structure, and a spring structure.

7. (Currently Amended) A heat regulating device for regulating a heat flow of an integrated circuit comprising:

at least one of means for inducing heat into a portion of a semiconductor body of the integrated circuit utilizing a plurality of thermo-electric structures[[:]] ~~and/~~ or means for dissipating heat away from a portion of a semiconductor body of the integrated circuit utilizing a plurality of thermo-electric structures;

at least one of the heat inducing means ~~and/~~ or heat dissipating means create a uniform temperature gradient across the semiconductor body;

heat conducting means in contact with the means for inducing heat into or dissipating heat away from the portion of the semiconductor body; and

at least one of the plurality of the thermoelectric structures has a structure with a distribution of line patterns that is denser towards center of the structure and progressively less dense towards outer edges of the structure.

8-22. (Cancelled)

23. (Previously Presented) A heat regulating device according to claim 3, with components embedded into the spreading assembly to manage the heat flow away from and/or into the integrated circuit semiconductor body.

24. (Canceled)

25. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures being embedded with measuring devices to measure various physical properties of the integrated circuit semiconductor body.

26. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures being an external element attached to the surface of the heat regulating device.

27. (Previously Presented) A heat regulating device according to claim 1, fabricated from a combination of various layers of silicon carbide and diamond.

28. - 31. (Cancelled)

32. (Previously Presented) A heat regulating device according to claim 1, each of the thermo-electrical structures is a composite composed of a layer having at least one part tailored to a heat-generating characteristic of a portion of the integrated circuit semiconductor body.

33. (Previously Presented) A heat regulating device according to claim 1, at least one thermo-electric structure is integrated with the semiconductor body such that the thermo-electrical structure is positioned in a region of the semiconductor body where a hot spot is anticipated.

34. (Previously Presented) A system that facilitates reducing the accumulation and concentration of stress in an integrated circuit, comprising:

means for creating a uniform temperature gradient throughout the integrated circuit based at least in part upon one of a heat dissipation and a heat induction; and

the means for creating a uniform temperature gradient has a denser distribution of line patterns towards center of its structure and a less dense distribution of lines towards outer limits of the structure.